

## **Claims.**

1. (Canceled). An antiaging cosmetic delivery system comprised of, (i) An Extra-cellular antioxidant or Free-radical neutralizing composition, and (ii) An Intra-cellular antioxidant or Free-radical neutralizing composition, and (iii) An Anti-inflammatory composition, and (iv) A collagen or fibrin boosting composition, and (v) A carrier base or topical delivery system.
2. (Canceled). A composition according to claim 1, wherein such compositions are useful for skin, nail, and hair applications.
3. (Canceled). A composition according to claim 1, wherein Extra-cellular antioxidant or Free-radical neutralizing composition can be selected from, but not limited to, at least one cationic UV or Free-radical absorbing compositions.
4. (Canceled). A composition according to claim 1, wherein Extra-cellular antioxidant or Free-radical neutralizing composition can be from 0.0001% to 25% by weight.
5. (Canceled). A composition according to claim 1, wherein Extra-cellular antioxidant or Free-radical neutralizer composition can be selected from, but not limited to, quaternary ammonium ion-pair derivatives of cysteine, N-Acetyl-Cysteine, N-Acyl-Cysteine, N-Aroyl-Cysteine, Cystine, N-Acetyl-Cystine, N-Acyl-Cystine, N-Aroyl-Cystine, Glutathione, Glutathione dimer (oxidized glutathione), Glutathione Mono Esters, Glutathione dimer esters, biotin, lipoic acid, ascorbic acid, ascorbic acid esters, or amino benzoic acid, or salicylic acid, pantothenic acid, carnosine, and combinations thereof.
6. (Canceled). A composition according to claim 1, wherein Intracellular antioxidant or Free-radical neutralizing composition can be selected from, but not limited to, at least one composition

from one of the following classes of compositions: phenolic, polyphenolic, carotenoid, flavonoid, anthocyanin, xanthone, disulfide, sulfhydryl, or mixtures thereof.

7. (Canceled). A composition according to claim 1, wherein intra-cellular antioxidant or free-radical neutralizing composition is selected from, but not limited to Ascorbic acid, Ascorbic acid derivatives, Vitamin A, members of Vitamins B group, Vitamin D, Vitamin K, Carotenes, Biotin, Folic Acid Vitamin E, Vitamin E derivatives, Tocotrienol, Rutin, Quercetin, Hesperedin (*Citrus sinensis*), Diosmin (*Citrus sinensis*), Mangiferin (*Mangifera indica*), Mangostin (*Garcinia mangostana*), Cyanidin (*Vaccinium myrtillus*), Astaxanthin (*Haematococcus algae*), Lutein (*Tagetes patula*), Lycopene (*Lycopersicum esculentum*), Resveratrol (*Polygonum cuspidatum*), Tetrahydrocurcumin (*Curcuma longa*), Rosmarinic acid (*Rosmarinus officinalis*), Hypericin (*Hypericum perforatum*), Ellagic acid (*Punica granatum*), Chlorogenic acid (*Vaccinium vulgare*), Oleuropein (*Olea europaea*), alpha-Lipoic acid, Glutathione, Andrographolide, Grapeseed extract, Green Tea Extract, Polyphenols, Pycnogenol (Pine Bark extract), White Tea extract, Black Tea extract, (*Andrographis paniculata*), Carnosine, Niacinamide, Emblica extract, hydroquinone, arbutin, hydroquinone derivatives, Paper Mulberry extract (*Broussonetia kazinoki*), Mitracarpe extract (*Mitracarpus scaber*), Bearberry extract (*Arctostaphylos uva ursi*), Yellow Dock extract (*Rumex crispus* and *Rumex occidentalis*), Glutathione, Leucocyte extract, Aspergillus orizae extract (*Aspergillus orizae*), Licorice Root extract (*Glycyrrhiza glabra*), Rosmarinic acid (*Rosmarinus officinalis*), Tetrahydrocurcumin, Green Tea extract (*Camellia sinensis*), Yohimbe extract (*Pausinystalia yohimbe*), Ecklonia cava extract, niacinamide, Hydroxytyrosolic acid, Spondias mombin extract, Maprounea guianensis extract, Waltheria indica extract, Gouania blanchetiana extract, Cordia schomburgkii extract, Randia armata extract, Hibiscus furcellatus extract, Galanga extract (*Kaempferia galanga*), Benzophenone-3, Benzophenone-4, Ethylhexyl

Methoxycinnamate, Homosalate, Ethylhexyl salicylate, Octocrylene, Menthyl anthranilate, Avobenzone, Lawsone, Sulisobenzene, Trolamine salicylate, Lawsone, Glyceryl aminobenzoate, Cinoxate, PABA, copper nucleotide, zinc nucleotide, manganese nucleotide, and combinations thereof.

8. (Canceled). A composition according to claim 1, wherein Intracellular antioxidant or Free-radical neutralizer composition can be from 0.0001% to 10% by weight.

9. (Canceled). A composition according to claim 1, wherein anti-inflammatory composition can be selected from, but not limited to, steroid, terpene, alkaloid, essential oil, analgesic, and natural extracts class of compounds.

10. (Canceled). A composition according to claim 1, wherein anti-inflammatory composition can be selected from, but not limited to, Horse Chestnut Extract (*Aesculus hippocastanum* extract)), Esculin, Escin, Yohimbine, Capsicum Oleoresin, Capsaicin, Niacin, Niacin Esters, Methyl Nicotinate, Benzyl Nicotinate, Niacinamide, Niacinamide derivatives, Ruscogenins (*Butchers Broom* extract; *Ruscus aculeatus* extract), Diosgenin (*Trigonella foenumgraecum*, Fenugreek), Emblica extract (*Phyllanthus emblica* extract), Asiaticoside (*Centella asiatica* extract), Boswellia Extract (*Boswellia serrata*), Ginger Root Extract (*Zingiber Officianalis*), Piperine, Vitamin K, Melilot (*Melilotus officinalis* extract), Glycyrrhetic acid, Ursolic acid, Sericoside (*Terminalia sericea* extract), Darutoside (*Siegesbeckia orientalis* extract), Amni visnaga extract, extract of Red Vine (*Vitis-Vinifera*) leaves, apigenin, phytosan, luteolin; various plant extracts such as *Tinospora*, *Stephania*, *Vitis*, *Feverfew*, *Baccharus*, *Rumex*, *Psoralea*, *Coptis*, *Ogon*, *Polygonum*, *Cinnamon*, *Qiang Huo*, *Scoparia*, *Tithinia*, *Celastrus*, *Eucomis*, *SAMe*, *Evodia*, *Syzygium*, *Capsicum*, *Galanga*, *Turmeric*, and *Ginger*, and combinations thereof.

11. (Canceled). A composition according to claim 1, wherein anti-inflammatory composition can be from 0.0001% to 10% by weight.

12. (Canceled). A composition according to claim 1, wherein collagen or fibrin boosting composition can be selected from, but not limited to, glucosamine, N-acetyl-glucosamine, chondroitin, algae extracts, chitosan, niacinamide, niacinamide derivatives, copper nucleotides, zinc nucleotides, manganese nucleotides, glutathione, carnosine, vitamin C, vitamin E, vitamin A, Coenzyme Q10, lipoic acid, dimethylamino ethanol, Ascorbic acid, Ascorbic acid derivatives, Glucosamine ascorbate, Arginine ascorbate, Lysine ascorbate, Glutathione ascorbate, Nicotinamide ascorbate, Niacin ascorbate, Allantoin ascorbate, Creatine ascorbate, Creatinine ascorbate, Chondroitin ascorbate, Chitosan ascorbate, DNA Ascorbate, Carnosine ascorbate, Vitamin E, various Vitamin E derivatives, Tocotrienol, Rutin, Quercetin, Hesperedin (Citrus sinensis), Diosmin (Citrus sinensis), Mangiferin (Mangifera indica), Mangostin (Garcinia mangostana), Cyanidin (Vaccinium myrtillus), Astaxanthin (Haematococcus algae), Lutein (Tagetes patula), Lycopene (Lycopersicum esculentum), Resveratrol (Polygonum cuspidatum), Tetrahydrocurcumin (Curcuma longa), Rosmarinic acid (Rosmarinus officinalis), Hypericin (Hypericum perforatum), Ellagic acid (Punica granatum), Chlorogenic acid (Vaccinium vulgaris), Oleuropein (Olea europaea), Lipoic acid, Niacinamide lipoate, Glutathione, Andrographolide (Andrographis paniculata), Carnosine, Niacinamide, Potentilla erecta extract, Polyphenols, Grapeseed extract, Pycnogenol (Pine Bark extract), copper nucleotide, zinc nucleotide, manganese nucleotide, copper glucoside, zinc glucoside, manganese glucoside, various plant extracts, and combinations thereof.

13. (Canceled). A composition according to claim 1, wherein collagen or fibrin boosting composition can be from 0.0001% to 25% by weight.

14. (Canceled). A composition according to claim 1, wherein a carrier base or delivery system can be traditional water and oil emulsions, suspensions, colloids, microemulsions, clear solutions, suspensions of nanoparticles, emulsions of nanoparticles, or anhydrous compositions.

15. (Canceled). A composition according to claim 1, wherein additional skin beneficial ingredients, such as skin cleansers, surfactants (cationic, anionic, non-ionic, amphoteric, and zwitterionic), skin and hair conditioning agents, vitamins, hormones, minerals, plant extracts, anti-inflammatory agents, concentrates of plant extracts, emollients, moisturizers, skin protectants, humectants, silicones, skin soothing ingredients, analgesics, skin penetration enhancers, solubilizers, moisturizers, emollients, anesthetics, colorants, perfumes, preservatives, seeds, broken seed nut shells, silica, clays, beads, luffa particles, polyethylene balls, mica, pH adjusters, processing aids, fragrances, and like can be added to the formulation.

16. (Canceled). A composition according to claim 5, wherein a cationic extra-cellular antioxidant or Free-radical neutralizer composition can be further selected from, but not limited to, UV and free-radical neutralizing ion-pair derivatives of Stearalkonium chloride, Cetrimonium chloride, behentrimonium methosulfate, Dicetyl dimonium chloride, Benzalkonium chloride, various Polyquaternium compositions (such as Polyquaternium-1, Polyquaternium-2, Polyquaternium-3, Polyquaternium-4, Polyquaternium-5, Polyquaternium-6, Polyquaternium-7, Polyquaternium-10, Polyquaternium-11, Polyquaternium-16, Polyquaternium-44, Polyquaternium-46, Polyquaternium-59, etc.), various UV-absorbing quaternium compositions (such as

Cinnamidopropyltrimonium chloride), various Quaternium compositions (such as Quaternium-82, Quaternium-7, Quaternium-10, Quaternium-79, and Quaternium-79 condensates, etc.), various silicone quaternium compositions, various polymeric quaternium compositions, such as Polyquaternium-46 (Vinyl caprolactam/vinylpyrrolidone/methylvinylimidazolium methylsulfate), and combinations thereof.

17. (Canceled). A composition according to claim 16, wherein a cationic extra-cellular antioxidant or Free-radical neutralizing composition can be further selected from, but not limited to, Cinnamidopropyltrimonium N-Acetyl-Cysteinate, Cinnamidopropyltrimonium ascorbate, Cinnamidopropyltrimonium glutathionate, Cinnamidopropyltrimonium carnosinate, Cinnamidopropyltrimonium lipoate, Cinnamidopropyltrimonium niacinate, Cinnamidopropyltrimonium biotinate, Cinnamidopropyltrimonium pantothenate, Polyquaternium-59 Glutathionate, Polyquaternium-59 ascorbate, Polyquaternium-59 carnosinate, Polyquaternium-59 lipoate, Polyquaternium-59 niacinate, Polyquaternium-59 pantothenate, Polyquaternium-59 N-acetyl-cysteinate, Polyquaternium-59 biotinate, Stearalkonium ascorbate, Stearalkonium biotinate, Stearalkonium N-acetyl-cysteinate, Stearalkonium lipoate, Stearalkonium niacinate, Stearalkonium carnosinate, Stearalkonium glutathionate, Stearalkonium pantothenate, and combinations thereof.

18. (New). A skin antiaging cosmetic delivery system for topical application comprised of; (i) A quaternary ammonium Extra-cellular antioxidant agent, and (ii) An Intra-cellular antioxidant agent, and (iii) An Anti-inflammatory agent, and (iv) A collagen boosting agent, and (v) A carrier base.

19. (New). A delivery system according to claim 18, wherein quaternary ammonium Extra-cellular antioxidant agent is selected from a quaternary ammonium derivative of cysteine, N-

Acetyl-Cysteine, N-Acyl-Cysteine, N-Aroyl-Cysteine, Cystine, N-Acetyl-Cystine, N-Acyl-Cystine, N-Aroyl-Cystine, Glutathione, Glutathione dimer (oxidized glutathione), Glutathione Mono Esters, Glutathione dimer esters, biotin, lipoic acid, ascorbic acid, ascorbic acid esters, pantothenic acid, carnosine, and combinations thereof.

20. (New). A delivery system according to claim 18, wherein a quaternary ammonium extra-cellular antioxidant agent is further selected from, Cinnamidopropyl Trimonium N-Acetyl-Cysteinate, Cinnamidopropyl Trimonium ascorbate, Cinnamidopropyl Trimonium glutathionate, Cinnamidopropyl Trimonium carnosinate, Cinnamidopropyl Trimonium lipoate, Cinnamidopropyl Trimonium niacinate, Cinnamidopropyl Trimonium biotinate, Cinnamidopropyl Trimonium pantothenate, Polyquaternium-59 Glutathionate, Polyquaternium-59 ascorbate, Polyquaternium-59 carnosinate, Polyquaternium-59 lipoate, Polyquaternium-59 niacinate, Polyquaternium-59 pantothenate, Polyquaternium-59 N-acetyl-cysteinate, Polyquaternium-59 biotinate, Stearalkonium ascorbate, Stearalkonium biotinate, Stearalkonium N-acetyl-cysteinate, Stearalkonium lipoate, Stearalkonium niacinate, Stearalkonium carnosinate, Stearalkonium glutathionate, Stearalkonium pantothenate, and combinations thereof.

21. (Canceled). A delivery system according to claim 18, wherein quaternary ammonium Extra-cellular antioxidant agent is Polyquaternium-59 Glutathione.

22. (New). A delivery system according to claim 18, wherein quaternary ammonium Extra-cellular antioxidant agent is Cinnamidopropyl Trimonium N-Acetyl-Cysteinate.

23. (New). A delivery system according to claim 18, wherein an intra-cellular antioxidant agent is selected from Ascorbic acid, Ascorbic acid derivatives, Vitamin A, members of

Vitamins B group, Vitamin D, Vitamin K, Carotenes, Biotin, Folic Acid Vitamin E, Vitamin E derivatives, Tocotrienol, Rutin, Quercetin, Hesperedin (*Citrus sinensis*), Diosmin (*Citrus sinensis*), Mangiferin (*Mangifera indica*), Mangostin (*Garcinia mangostana*), Cyanidin (*Vaccinium myrtillus*), Astaxanthin (*Haematococcus algae*), Lutein (*Tagetes patula*), Lycopene (*Lycopodium esculentum*), Resveratrol (*Polygonum cuspidatum*), Tetrahydrocurcumin (*Curcuma longa*), Rosmarinic acid (*Rosmarinus officinalis*), Hypericin (*Hypericum perforatum*), Ellagic acid (*Punica granatum*), Chlorogenic acid (*Vaccinium vulgare*), Oleuropein (*Olea europaea*), alpha-Lipoic acid, Dihydrolipoic acid, Glutathione, Andrographolide, Grape seed extract, Green Tea Extract, Polyphenols, Pycnogenol (Pine Bark extract), White Tea extract, Black Tea extract, (Andrographis paniculata), Carnosine, Niacinamide, Emblica extract, hydroquinone, arbutin, hydroquinone derivatives, Paper Mulberry extract (*Broussonetia kazinoki*), Mitracarpe extract (*Mitracarpus scaber*), Bearberry extract (*Arctostaphylos uva ursi*), Yellow Dock extract (*Rumex crispus* and *Rumex occidentalis*), Glutathione, Leucocyte extract, Aspergillus oryzae extract (*Aspergillus oryzae*), Licorice Root extract (*Glycyrrhiza glabra*), Rosmarinic acid (*Rosmarinus officinalis*), Tetrahydrocurcumin, Green Tea extract (*Camellia sinensis*), Yohimbe extract (*Pausinystalia yohimbe*), Ecklonia cava extract, niacinamide, Hydroxytyrosolic acid, Spondias mombin extract, Maprounea guianensis extract, Waltheria indica extract, Gouania blanchetiana extract, Cordia alliodora extract, Randia armata extract, Hibiscus furcellatus extract, Galanga extract (*Kaempferia galanga*), Benzophenone-3, Benzophenone-4, Ethylhexyl Methoxycinnamate, Homosalate, Ethylhexyl salicylate, Octocrylene, Menthyl anthranilate, Avobenzone, Lawsone, Sulisobenzene, Trolamine salicylate, Lawsone, Glycerol aminobenzoate, Cinoxate, PABA, copper nucleotide, zinc nucleotide, manganese nucleotide, and combinations thereof.

24. (Canceled). A delivery system according to claim 18, wherein intra-cellular antioxidant agent is Dihydrolipoic acid.



25. (New). A delivery system according to claim 18, wherein intra-cellular antioxidant agent is copper nucleotide.

26. (New). A delivery system according to claim 18, wherein anti-inflammatory agent is selected from Horse Chestnut Extract (*Aesculus hippocastanum* extract)), Esculin, Escin, Yohimbine, Capsicum Oleoresin, Capsaicin, Niacin, Niacin Esters, Methyl Nicotinate, Benzyl Nicotinate, Niacinamide, Niacinamide derivatives, Ruscogenins, Diosgenin (*Trigonella foenumgraecum*, Fenugreek), Emblica extract (*Phyllanthus emblica* extract), Asiaticoside (*Centella asiatica* extract), Boswellia Extract (*Boswellia serrata*), Ginger Root Extract (*Zingiber Officianalis*), Piperine, Vitamin K, Melilot (*Melilotus officinalis* extract), Glycyrrhetic acid, Ursolic acid, Sericoside (*Terminalia sericea* extract), Darutoside (*Siegesbeckia orientalis* extract), Amni visnaga extract, extract of Red Vine (*Vitis-Vinifera*) leaves, apigenin, phytosan, luteolin; Tinospora, Stephania, Vitis, Feverfew, Baccharus, Rumex, Psoralea, Coptis, Ogon, Polygonum, Cinnamon, Qiang Huo, Scoparia, Tithinia, Celastrus, Eucomis, SAME, Evodia, Syzygium, Capsicum, Galanga, Turmeric, Ginger, and combinations thereof.

27. (New). A delivery system according to claim 18, wherein anti-inflammatory agent is apigenin.

28. (Canceled). A delivery system according to claim 18, wherein anti-inflammatory agent is yohimbine.

29. (New). A delivery system according to claim 18, wherein collagen boosting agent is selected from glucosamine, N-acetyl-glucosamine, chondroitin, algae extracts, chitosan, niacinamide, niacinamide derivatives, copper nucleotides zinc nucleotide, manganese nucleotide, glutathione, carnosine, vitamin C, vitamin E, vitamin A, Coenzyme Q10, lipoic acid, dimethylamino ethanol, Ascorbic acid, Ascorbic acid derivatives, Glucosamine

ascorbate, Arginine ascorbate, Lysine ascorbate, Glutathione ascorbate, Nicotinamide ascorbate, Niacin ascorbate, Allantoin ascorbate, Creatine ascorbate, Creatinine ascorbate, Chondroitin ascorbate, Chitosan ascorbate, DNA Ascorbate, Carnosine ascorbate, Vitamin E, various Vitamin E derivatives, Tocotrienol, Rutin, Quercetin, Hesperedin (Citrus sinensis), Diosmin (Citrus sinensis), Mangiferin (Mangifera indica), Mangostin (Garcinia mangostana), Cyanidin (Vaccinium myrtillus), Astaxanthin (Haematococcus algae), Lutein (Tagetes patula), Lycopene (Lycopersicum esculentum), Resveratrol (Polygonum cuspidatum), Tetrahydrocurcumin (Curcuma longa), Rosmarinic acid (Rosmarinus officinalis), Hypericin (Hypericum perforatum), Ellagic acid (Punica granatum), Chlorogenic acid (Vaccinium vulgaris), Oleuropein (Olea europaea), Niacinamide lipoate, Glutathione, Andrographolide (Andrographis paniculata), Potentilla erecta extract, Polyphenols, Grape seed extract, Pycnogenol (Pine Bark extract), copper glucoside, zinc glucoside, manganese glucoside, and combinations thereof.

30. (New). A delivery system according to claim 18, wherein collagen boosting agent is carnosine ascorbate.

31. (Canceled). A delivery system according to claim 18, wherein collagen boosting agent is Niacinamide Lipoate.

32. (Canceled). A delivery system according to claim 18, wherein collagen boosting agent is Niacinamide Ascorbate.

33. (New). A delivery system according to claim 18, wherein a carrier base is selected from traditional water and oil emulsions, suspensions, colloids, microemulsions, clear solutions, suspensions of nanoparticles, emulsions of nanoparticles, or anhydrous compositions.

34. (New). A delivery system according to claim 18, wherein skin cleansers, surfactants, skin conditioning agents, hair conditioning agents, vitamins, hormones, minerals, plant extracts, anti-inflammatory agents, concentrates of plant extracts, emollients, moisturizers, skin protectants, humectants, silicones, skin soothing ingredients, analgesics, skin penetration enhancers, solubilizers, anesthetics, colorants, perfumes, preservatives, seeds, seed nut shells, silica, clays, beads, luffa particles, polyethylene balls, mica, pH adjusters, processing aids, fragrances, and their combinations, are included.

35. (New). A carrier base according to claim 18, wherein carrier base is an anhydrous composition.